

**Taking Antimicrobial Agents and Eating Cheese Made from Non-Pasteurized Milk
Are Risk Factors for Infection with Multi-Drug Resistant *Salmonella* Serotype
Newport—United States, 2002-2003**

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Background A new strain of *Salmonella* resistant to ceftriaxone and eight other antimicrobial agents recently emerged in the United States. This strain, *S.* Newport-MDRampC, has been traced in outbreaks to beef and dairy products, but little is known about risk factors for sporadic infection.

Methods In 2002-2003, the Foodborne Diseases Active Surveillance Network (FoodNet) conducted a 12-month case-control study in eight states where active surveillance for culture-confirmed *Salmonella* infection is performed and where *Salmonella* isolates are forwarded to CDC for broth microdilution susceptibility testing. After excluding outbreaks, we enrolled persons with *S.* Newport infection. Cases had *S.* Newport-MDRampC infection; ill controls had pan-susceptible *S.* Newport infection. Well controls were recruited through telephone random digit dialing. Participants were asked about exposures in the five days before illness onset (cases, ill controls) or interview (well controls).

Results From 2002 – 2003, FoodNet ascertained 344 persons with sporadic *S.* Newport infection. Of 147 isolates from interviewed patients, 28 (19%) were Newport-MDRampC and 108 (73%) were pan-susceptible. We enrolled 1154 well controls. In the day prior to illness onset, 14% of Newport-MDRampC patients were taking, for reasons not related to *Salmonella* infection, an antimicrobial agent to which Newport-MDRampC is resistant compared to 1% of ill controls (odds ratio [OR] 17.8; 95% Confidence Interval [CI], 1.9-166.8) and 1% of well controls (OR 13.4; CI, 4.1-43.9). In the 5 days prior to illness onset, patients with Newport-MDRampC infection were more likely to eat cheeses made from non-pasteurized milk compared to ill controls (OR 10.8; CI, 2.0-59.0) or well controls (OR 4.7; CI, 1.7-12.9). Foreign travel, reptile exposure and swimming in open water were more common among ill controls than well controls; these factors were not associated with Newport-MDRampC infection.

Conclusions Sporadic infection with Newport-MDRampC is acquired through the domestic food supply; non-pasteurized dairy products are one likely source. Further efforts are needed to prevent transmission of this highly resistant *Salmonella* strain.